# AMENDMENTS

**In the Claims**

1. **(Previously Presented)** A method for identifying a ligand for a G protein-coupled receptor (GPCR), the method comprising:

contacting a G protein-coupled receptor (GPCR) with a candidate agent, the GPCR having a conformationally sensitive detectable probe positioned on or within a conformationally sensitive third intracellular domain of the GPCR with the proviso that the probe is not positioned in a transmembrane domain; and

detecting a detectable signal of the conformationally sensitive detectable probe;

wherein detection of a change in the detectable signal in the presence of the candidate agent as compared to the absence of the candidate agent indicates the candidate agent is a ligand for the GPCR.

2. **(Currently Amended)** The method of claim 1, wherein the conformationally sensitive intracellular domain is a third intracellular domain of the GPCR and wherein the conformationally sensitive detectable probe is a detectable label attached to one or more amino acid residues within the third intracellular domain of the GPCR so that a conformational change in the GPCR **in the presence** ~~due to agonist activity~~ of the candidate agent causes a change in the detectable signal of the detectable label.

3. **(Original)** The method of claim 2, wherein the detectable label is a fluorescent probe.

4. **(Original)** The method of claim 2, wherein the detectable label is attached to an amino acid residue corresponding to amino acid residue at position 265 in a β2-adrenergic receptor.

5. **(Withdrawn) (Previously Presented)** The method of claim 1, wherein the conformationally sensitive detectable probe is a protease cleavage site within the GPCR so that a conformational change in the GPCR changes the accessibility of the protease cleavage site to protease cleavage, and the detectable signal is a protease cleavage product.

6. (**Withdrawn**) The method of claim 5, wherein the protease cleavage product is an N-terminal fragment of the GPCR.

7. (**Withdrawn**) The method of claim 5, wherein the protease cleavage product is an C-terminal fragment of the GPCR.

8. (**Withdrawn**) (**Previously Presented**) The method of claim 4, wherein the detectable probe comprises two protease cleavage sites within-the third intracellular domain of the GPCR, the cleavage sites flanking an epitope tag, wherein a conformational change due to agonist activity changes the accessibility of the protease cleavage site to protease cleavage, and the detectable signal is a polypeptide of the epitope tag released by protease cleavage of the two cleavage sites.

9. (**Original**) The method of claim 1, wherein the GPCR is immobilized by attachment to a support.

10. (**Original**) The method of claim 9, wherein the GPCR is attached to the support by binding of an N-terminal portion to the support.

11. (**Original**) The method of claim 9, wherein the GPCR is attached to the support by binding of an C-terminal portion to the support.

12. (**Original**) The method of claim 1, wherein the GPCR is in a membrane.

13. (**Withdrawn**) The method of claim 5, wherein the GPCR is expressed in a eukaryotic host cell.

14. (**Withdrawn**) An apparatus for detecting a ligand having agonist activity for a G protein-coupled receptor, the apparatus comprising:

a G protein-coupled receptor (GPCR) with a candidate agent, the GPCR having a conformationally sensitive detectable probe positioned on or within a third intracellular loop of the GPCR; and

a immobilization phase in which the GPCR is positioned.

15. (**Withdrawn**) The apparatus of claim 14, wherein the conformationally sensitive detectable probe is a detectable label attached to one or more amino acid residues within the third intracellular loop of the GPCR so that a conformational change in the GPCR due to agonist activity of the candidate agent causes a change in the detectable signal of the detectable label.

16. (**Withdrawn**) The apparatus of claim 15, wherein the detectable label is a fluorescent probe.

17. (**Withdrawn**) The apparatus of claim 15, wherein the detectable label is attached to an amino acid residue corresponding to amino acid residue at position 265 in a β2-adrenergic receptor.

18. (**Withdrawn**) The apparatus of claim 14, wherein the conformationally sensitive detectable probe is a protease cleavage site. within the GPCR so that a conformational change in the GPCR changes the accessibility of the protease cleavage site to protease cleavage, and the detectable signal is a protease cleavage product.

19. (**Withdrawn**) The apparatus of claim 14, wherein the detectable probe comprises two protease cleavage sties within the third intracellular domain of the GPCR, the cleavage sites flanking an epitope tag, wherein a conformational change due to agonist activity renders the cleavage sites accessible to protease cleavage, and the detectable signal is a polypeptide of the epitope tag released by protease cleavage of the two cleavage sites.

20. (**Currently Amended**) A method for identifying a ligand for a G protein-coupled receptor (GPCR), the method comprising:

contacting a plurality of G protein-coupled receptors (GPCRs) with a candidate agent, the GPCRs having a conformationally sensitive detectable probe positioned on or within a conformationally sensitive third intracellular domain**, wherein the GPCRs are provided on an array at assigned coordinates**; and

detecting a detectable signal of the conformationally sensitive detectable probe;

wherein detection of a change in the detectable signal **at a coordinate on the array** in the presence of the candidate agent as compared to the absence of the candidate agent indicates the candidate agent is a ligand for the GPCR **at the coordinate on the array**.

21. (**Previously Presented**) The method of claim 20, wherein the detectable label is a fluorescent probe.

22. (**Previously Presented**) The method of claim 20, wherein the GPCR is immobilized by attachment to a support.

23. (**Previously Presented**) The method of claim 20, wherein the GPCR is in a membrane.